

## Install Grsecurity on CentOS 6

Written by BiRU

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**Grsecurity is a set of patches for the Linux kernel with an emphasis on enhancing security. It utilizes a multi-layered detection, prevention, and containment model.**

Features of Grsecurity :

- \* An intelligent and robust Role-Based Access Control (RBAC) system that can generate least privilege policies for your entire system with no configuration
  - \* Change root (chroot) hardening
  - \* /tmp race prevention
  - \* Extensive auditing
  - \* Prevention of arbitrary code execution, regardless of the technique used (stack smashing, heap corruption, etc)
  - \* Prevention of arbitrary code execution in the kernel
  - \* Randomization of the stack, library, and heap bases
  - \* Kernel stack base randomization
  - \* Protection against exploitable null-pointer dereference bugs in the kernel
  - \* Reduction of the risk of sensitive information being leaked by arbitrary-read kernel bugs
  - \* A restriction that allows a user to only view his/her processes
  - \* Security alerts and audits that contain the IP address of the person causing the alert
- =====

**The ideal way to install Grsecurity on 32 bit OS is :**  
**Fetch the sources:**

### 1. Download kernel from kernel.org

```
[root@server4 ~]# wget https://www.kernel.org/pub/linux/ker...-2.6.31.tar.gz
```

### 2. Downlaod latest Grsecurity patch from below URL :

```
[root@server4 ~]# wget http://grsecurity.net/stable/grsecur...08171247.patch
```

**[All grsecurity packages have a version string in their names. It contains both the version of the release itself and the kernel version it is meant for. For example, the**

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**version string 2.9.1-2.6.32-201308052151 tells us that the version of this grsecurity release is 2.9.1 and it is meant for kernel version 2.6.32. The last section of the version is a timestamp.]**

**So here I am using earlier kernel version than 2.6.32, which is “linux-2.6.31”**

### 3. Extract the kernel from tar.gz file:

```
[root@server4 ~]# tar xjf linux-2.6.31.tar.gz
```

### 4. Patch the kernel with grsecurity patch:

```
[root@server4 ~]# cd linux-2.6.31
root@server4 [linux-2.6.31]# patch -p1
root@server4 [linux-2.6.31]# mv linux-2.6.31 linux-2.6.31-grsec
```

### 5. Now start making the kernel :

```
root@server4 [linux-2.6.31]# make clean && make mrproper
```

### 6. Edit your kernel as per your need :

```
[root@server4 ~]# make menuconfig
```

### 7. Compile your kernel and install it:

```
root@server4 [linux-2.6.31]# make bzImage
root@server4 [linux-2.6.31]# make modules
root@server4 [linux-2.6.31]# make modules_install
```

### 8. Make sure it's working ok with the help of following command :

```
root@server4 [linux-2.6.31]# depmod 2.6.31-grsec
```

### 9. Installing and booting the new kernel :

```
root@server4 [linux-2.6.31]# cp arch/i386/boot/bzImage /boot/vmlinuz-2.6.31-grsec
```

### 10. There is also a file called “System.map” that must be copied to the same boot directory.

```
root@server4 [linux-2.6.31]# cp System.map /boot
```

### 11. Do not forget to make changes in /etc/grub.conf also go to grub prompt after this and fire below command :

```
# grub > savedefault --default=0 --once
```

### 12. Now reboot server :

```
root@server4 [linux-2.6.31]# Shutdown -r now.
```

**!!! Be Secured !!!** 